



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,947	01/21/2004	Walter N. Blejde	29685-74363	3934

21324 7590 08/24/2005
HAHN LOESER & PARKS, LLP
One GOJO Plaza
Suite 300
AKRON, OH 44311-1076

EXAMINER

TRAN, LEN

ART UNIT	PAPER NUMBER
----------	--------------

1725

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/761,947

Applicant(s)

BLEJDE ET AL.

Examiner

Len Tran

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7-9,11 and 13 is/are rejected.
- 7) ☒ Claim(s) 2,4,6,10 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5, 7, 8, 11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kumai et al (US 4,073,643).

As to claim 1 and 7, Kumai et al disclose a method of producing thin cast strip with low surface roughness and low porosity by continuous casting comprising the steps of:

- a. assembling a pair of cooled casting rolls having a nip between them and with confining closure adjacent the ends of nip;
- b. introducing molten steel having a total oxygen content of at least 100 ppm and a free oxygen content between 30 and 50 ppm between the pair of casting rolls to form a casting pool between the casting rolls at a temperature such that a majority of the oxide inclusions formed therein are in liquidus state;
- c. counter-rotating the casting rolls and transferring heat from the molten steel

Art Unit: 1725

to form metal shells on the surfaces of the casting rolls such that the shells grow to include oxide inclusions relating to the total oxygen content of the molten steel and form steel strip free of crocodile surface roughness; and

d. forming solidified thin steel strip through the nip between the casting rolls from said solidified shells (col. 2, lines 14-30 and table 4).

As to claim 2 and 8, the casting temperature is below 1600 degrees C (table 4).

As to claim 5 and 11, the carbon content in the range of 0.001 to 0.1%, Manganese in the range of 0.1 to 10%, and Si in the range of 0.01 to 10% (col. 2, lines 24-27).

As to claim 13, the aluminum content is less than 0.01 % (col. 2, line 26).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

Art Unit: 1725

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumai et al (US '643), and further in view of Strezov et al (US 2003/0000679).

Kumai et al discloses the claimed invention above, but fails to teach casting rollers having a random pattern of discrete projections, having an average height of at least 20 microns and having average surface distribution of between 5 and 200 peaks per square millimeters.

However, Strezov (US '2003) discloses a casting rollers having an average height of at least 20 microns and having average surface distribution of between 5 and 200 peaks per square millimeters for the purpose of less prone to generation of chatter defects (col. 2, lines 1 to [0017]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to obvious to combine the rollers taught by Strezov (US 2003) with Kumai et al's method in order to prevent chatter defects.

Art Unit: 1725

Allowable Subject Matter

6. Claims 4, 6, 10, and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior arts of record fail to teach having oxide inclusions comprised of MnO, SiO₂, and Al₂O₃ distributed between 2 and 4 grams per cubic centimeter and 120 oxide inclusions per square millimeter to a depth of 2 microns.

Response to Arguments

7. Applicant's arguments filed 4/6/05 have been fully considered but they are not persuasive.

Applicant argues that Kumai et al fail to teach free oxygen between 30-70 ppm. Examiner conducted an interview with applicant on 4/6/05 and withdrew rejection. Examiner reviewed Kumai and in table 4, Kumai teaches the claimed range. Since examiner agreed to withdraw rejection, this rejection remains a non-final rejection.

Inquiry

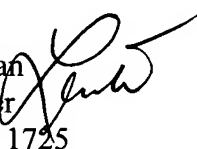
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Len Tran whose telephone number is (571) 272-1184. The examiner can normally be reached on M-F, 8:30 - 5.

Art Unit: 1725

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Len Tran
Examiner
Art Unit 1725



August 18, 2005